

CLAIM AMENDMENTS:

1. (currently amended) A semiconductor device of a double diffused MOS structure employing a silicon carbide semiconductor substrate, the device comprising:

a silicon carbide semiconductor epitaxial layer provided on a surface of the silicon carbide semiconductor substrate and having a first conductivity which is the same conductivity as the silicon carbide semiconductor substrate; and

an impurity region formed by doping a surface portion of the silicon carbide semiconductor epitaxial layer with an impurity of a second conductivity, the impurity region having a profile such that a near surface thereof has a relatively low second-conductivity impurity concentration and a deep portion thereof has a relatively high second-conductivity impurity concentration,

wherein a second-conductivity impurity concentration in an outermost surface portion of the impurity region is controlled to be lower than a first-conductivity impurity concentration in the silicon carbide semiconductor epitaxial layer.

2. (canceled).

3. (currently amended) A semiconductor device manufacturing method for ~~manufactureing~~ manufacturing a semiconductor device of a double diffused MOS structure employing a silicon carbide semiconductor substrate, the method comprising steps of:

forming a silicon carbide semiconductor epitaxial layer having a first conductivity on a surface of the silicon carbide semiconductor substrate, the first conductivity being the same conductivity as the silicon carbide semiconductor substrate; and

doping a surface portion of the silicon carbide semiconductor epitaxial layer with an impurity of a second conductivity to form an impurity region having a profile such that a near surface thereof has a relatively low second-conductivity impurity concentration and a deep portion thereof has a relatively high second-conductivity impurity concentration.

wherein the surface portion of the silicon carbide semiconductor epitaxial layer is doped with the impurity of the second conductivity by single-step ion implantation in the impurity region forming step, the single-step ion implantation being performed with a single constant level of implantation energy.

4. (canceled).

5. (currently amended) [[A]] The semiconductor device manufacturing method as set forth in claim 3, wherein the impurity region is formed as having a profile such that a second-conductivity impurity concentration in an outermost surface portion thereof is lower than a first-conductivity impurity concentration in the silicon carbide semiconductor epitaxial layer in the impurity region forming step.

6. (new) The semiconductor device of claim 1, further comprising a further impurity region by doping a surface portion of the impurity region of the second conductivity with an impurity of the first conductivity, and

wherein a channel region having the first conductivity is formed in the outmost surface portion between the epitaxial layer and the further impurity region of the first conductivity.

7. (new) The method of claim 3, wherein a first-conductivity impurity concentration in the epitaxial layer is higher than a second-conductivity impurity concentration in an outermost surface portion of the impurity region, so as to form a channel region having the first conductivity in the outermost surface portion of the impurity region.